

Ym



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,781	11/29/2001	Yukihiro Abiko	826.1773	1698

21171 7590 11/04/2004

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

REKSTAD, ERICK J

ART UNIT PAPER NUMBER

2613

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Ym

Office Action Summary

Application No.

09/995,781

Applicant(s)

ABIKO ET AL.

Examiner

Erick Rekstad

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,13-18,22 and 23 is/are rejected.
- 7) ☐ Claim(s) 8,10-12 and 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This is a first action for application no. 09/995,781 filed on November 29, 2001 in which claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by 'Scene Change Detection in a MPEG Compressed Video Sequence' by Meng et al.
[claim 15]

As shown in Figure 7, Meng teaches the method of a scene change detection algorithm. The algorithm contains the steps of:

(a) collecting first information about a motion vector for each frame from moving image data which is compressed with inter-frame prediction encoding (Parsing and Statistical Stage). Note, the first information deals with motion vectors.

(b) collecting second information about a correlation with a preceding/succeeding frame without decoding an image of each frame (Parsing and Statistical Stage). Note, the second information deals with DCT variance.

(c) calculating a value of an evaluation function which includes the first and the second information as parameters (Detection Stage).

(d) determining a scene change by making a comparison between the calculated value of the evaluation function and a threshold value (Detection and Decision Stages) (Pages 16-19 Section 4. Direct Scene Change Detection in a MPEG bitstream).

[claim 22]

Meng teaches the first information is the number and magnitudes of motion vectors (Pages 17-18, Sections 4.1.2 and 4.2), whereas the second information is a square measure of a region having a low correlation with a preceding/succeeding frame (Page 17 Section 4.1.1, Page 20 Section 5.2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 4, 7,13, 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng.

[claims 1 and 23]

Meng teaches the algorithm as shown in Figure 7. Meng further teaches the use of the with an MPEG2 codec implemented in C language. Meng further teaches a user interface for the algorithm as shown in Figure 9 (Page 24 Section 9). Meng further teaches the use of the codec in a multimedia server (Page 14 Section 1). It would have been obvious to one of ordinary skill in the art at the time of the invention that the

algorithm is performed in the multimedia server device as required by claim 1. It would have been obvious to one of ordinary skill in the art at the time of the invention that the C code for the algorithm would be stored on the hard drive or other computer-readable storage medium of the server, as required by claim 16, as this is well known in the art (OFFICIAL NOTICE).

[claims 2, 7 and 16]

Meng teaches the use of a window threshold which determines a threshold using a window of values of frames (Page 18-19 Section 4.3). The values are obtained in the information collecting means. Further, the threshold is adjusted based on the incoming values as required by claim 7. By the operation of the threshold window and the information collecting means a scene change interval is obtained as each frame between scene changes is processed.

[claims 3 and 4]

Meng teaches the comparing of several of the first and second information values in a scene change interval by the scene change determining means (Page 18-19 Section 4.3, Fig. 3). Meng does not specifically teach the storage of the values. It would have been obvious to one of ordinary skill in the art at the time of the invention that in order to perform the scene detection method of Meng the values would have to be stored in a information storage means (Official Notice).

[claim 13]

Meng teaches the use of the magnitude and number of motion vectors for a frame (Page 17-18 Sections 4.1.2 and 4.2). Meng further teaches the use of a square

measure for determining a dissolve scene change (Page 17 Section 4.1.1, Page 20 Section 5.2). As shown in Figure 7, these values are obtained in the information collecting stage.

Claims 5, 6, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng as applied to claims 1 and 15 above, and further in view of US Patent 5,168,356 to Acampora et al.

[Claims 5, 6, 17 and 18]

As shown above, Meng teaches the MPEG codec device and method of claims 1 and 15. The codec uses the motion vectors and DCT values to determine a scene change. Meng does not teach the layout of the bitstream. As shown in Figure 3A, Acampora teaches an MPEG like bitstream in which the motion vectors (MV) are stored separate from the DCT information (DC and AC) (Col 3 Line 51-Col 4 Line 61). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the bitstream of Acampora with the MPED codec of Meng as the bitstream is MPEG like.

Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng as applied to claim 1 above, and further in view of US Patent 5,642,174 to Kazui et al.

[claim 9]

Meng teaches the device of claim 1. Meng further teaches the detection of a scene change in a B frame using the ratio of forward predicted macroblocks to backwards predicted macroblocks (Page 18 Section 4.2). Meng does not teach the

information collecting means outputting the number of bidirectionally predicted regions to the evaluation function. Kazui teaches a similar scene change detection process for B frames (Col 6 Lines 33-45). Kazui further teaches the information collecting means (counting means) counts the number of forward predicted, backward predicted and bidirectional predicted macroblocks. The counts are then sent to the evaluation means (scene change decision unit) (Col 4 Line 39-Col 5 Line 6). As shown in Figure 7, Kazui teaches the use of the bidirectional predicted macroblocks for determining a scene change (Col 5 Line 56-Col 6 Line 29). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the counting means of Kazui with the scene change detection means of Meng in order to obtain the number of forward and backward predicted macroblocks.

[claim 14]

As shown above for claim 9, Meng teaches the detection of a scene change based on the number of forward and backward predicted macroblocks. Meng further teaches that the scene change is detected when the ratio of forward to backward predicted macroblocks is above a threshold. The threshold is determined based on a window of values (Page 18-19 Section 4.3). Kazui teaches a similar scene change detection process for B frames (Col 6 Lines 33-45). Kazui further teaches the information collecting means (counting means) counts the number of forward predicted, backward predicted and bidirectional predicted macroblocks. The counts are then sent to the evaluation means (scene change decision unit) (Col 4 Line 39-Col 5 Line 6). As shown in Figure 7, Kazui teaches the use of the bidirectional predicted macroblocks for

determining a scene change. The scene change is based on the correlation between frames (Col 5 Line 56-Col 6 Line 29). It would have been obvious to one of ordinary skill in the art at the time of the invention that the device of Meng determines the threshold based on the appearance cycle (types of motion vectors) as required by claim 14.

Allowable Subject Matter

Claims 8, 10-12, 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

'Rapid Scene Analysis on Compressed Video' by Yeo et al.

US Patent 6,735,253 to Chang et al.

US Patent 6,473,459 to Sugano et al.

US Patent 5,774,593 to Zick et al.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 703-305-5543. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erick Rekstad 
Examiner
AU 2613
(703) 305-5543
erick.rekstad@uspto.gov


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600